

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1-20 (Canceled).

21. (Currently Amended) A radial slaving method for a device for reproducing information from an optical disc, in which the information stored on the disc in the form of alterations arranged along predetermined tracks of the disc is explored by a laser beam, which converges at a spot on the optical disc and results in a beam emerging from the [[said]] disc by reflection or transmission, the device being equipped with a multi-photodiode far-field detection system for detecting the emergent light beam, the method comprising:

- combining read signals of the photodiodes of the detection system ~~so as to~~ which form four read subsystems having two pairs of subsystems, the subsystems of each pair being arranged on either side of a first axis parallel to the image of the axis of the track being explored, and so that the pairs ~~[[being]]~~ are arranged on either side of a second axis perpendicular to the first axis, the first and second axes being axes of symmetry for the detection system, wherein combining the read signals of the ~~[[said]]~~ photodiodes takes the difference between the read signals of two subsystems belonging to different pairs, ~~in order to form forming a first~~ read signal along a first diagonal of the detection system and a second read signal along a second diagonal of the detection system;

- processing the first read signal by passing it through a first band-pass filter and a serially connected first amplifier;

- processing the second read signal by passing it through a second band-pass filter and a serially connected second amplifier;

- supplying an output of the first amplifier simultaneously to a first multiplier and a first delay circuit;

- supplying an output of the second amplifier simultaneously to a second multiplier and a second delay circuit;

- supplying an output of the first delay circuit to the second multiplier;

supplying an output of the second delay circuit to the first multiplier; and
supplying outputs of the first and second multipliers to the a differential amplifier
and low pass filtering an output of the differential amplifiers to generate a low-pass filter which
constitutes the radial error signal S_r whose sign and amplitude represent a radial positioning
error and

- phase-compare the signals obtained by each of the two subsystems in order to
obtain a radial error signal substantially proportional of the radial tracking.

22. (Original) The method according to Claim 21, in which the subsystems have photodiodes of a four-quadrant detector.

23. (Currently amended) A radial slaving method for a device for reproducing
information from an optical disc, in which the information stored on the disc in the form of
alterations arranged along predetermined tracks of the disc is explored by a laser beam, which
converges at a spot on the optical disc and results in a beam emerging from the disc by
reflection or transmission, the device being equipped with a multi-photodiode far-field detection
system for detecting the emergent light beam, the method comprising:

combining read signals of the photodiodes of the detection system so as to form four
read subsystems having two pairs of subsystems, the subsystems of each pair being arranged
on either side of a first axis parallel to the image of the axis of the track being explored and
having photodiodes of a four-quadrant detector, the pairs of subsystems being arranged on
either side of a second axis perpendicular to the first axis, the first and second axes being axes
of symmetry for the detection system, wherein combining the read signals of the photodiodes
takes the difference between the read signals of two subsystems belonging to different pairs in
order to form a read signal along a first diagonal of the detection system and a read signal
along a second diagonal of the detection system; and

phase-comparing the signals obtained by each of the two subsystems in order to
obtain a radial error signal substantially proportional to the radial tracking. ~~The method~~
~~according to Claim 22, wherein said step of phase-comparing the read signals along the [[said]]~~
~~first and second diagonals performs and performing a cross-correlation between each read~~
~~signal of one diagonal and the signal of the other diagonal, to which a predetermined delay is~~
~~assigned.~~

24. (Currently amended) The method according to Claim 23, wherein the predetermined delay is selected as a function of the maximum frequency of the read signals and ~~[[the]]~~ a modulation depth of the optical disc.

25. (Original) The method according to Claim 23, wherein the predetermined delay is selected to be less than the clock period of the information to be read.

26. (Currently amended) The method according to Claim 21, ~~furthermore comprises~~ further comprising a rapid pre-correction step, which dynamically ~~adjustes~~ adjusts the delays of the read signals along the first and second diagonals, in ~~[[the]]~~ channels for constructing the readout signal, as a function of the radial error signal.

27. (Currently amended) A radial slaving method for a device for reproducing information from an optical disc, in which the information stored on the disc in the form of alterations arranged along predetermined tracks of the disc is explored by a laser beam, which converges at a spot on the optical disc and results in a beam emerging from the disc by reflection or transmission, the device being equipped with a multi-photodiode far-field detection system for detecting the emergent light beam, the method comprising:

combining read signals of the photodiodes of the detection system so as to form four read subsystems having two pairs of subsystems, the subsystems of each pair being arranged on either side of a first axis parallel to the image of the axis of the track being explored, and arranged on either side of a second axis perpendicular to the first axis, the first and second axes being axes of symmetry for the detection system, wherein combining the read signals of the photodiodes takes the difference between the read signals of two subsystems belonging to different pairs in order to form a read signal along a first diagonal of the detection system and a read signal along a second diagonal of the detection system; and

phase-comparing the signals obtained by each of the two subsystems in order to obtain a radial error signal substantially proportional to the radial tracking,

rapid pre-correcting to dynamically adjust the delays of the read signals along the first and second diagonals, in the channels for constructing the readout signal, as a function of the radial error signal. ~~The method according to Claim 26, wherein said rapid pre-correction step:~~

- filters the radial error signal in order to keep only the high-frequency components of the signal; and
- determines an inverse variation of the delays as a function of the high-frequency component values, in order to minimize the phase-shift effects of the readout signal.

28. - 37. (Canceled)